UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,787	12/30/2003	John J. Richardson	MS304928.01/MSFTP493US	1088

27195 7590 09/21/2007	EXAMINER
AMIN. TUROCY & CALVIN, LLP	WU, QING YUAN
24TH FLOOR, NATIONAL CITY CENTER	

ART UNIT	PAPER NUMBER
2194	

NOTIFICATION DATE	DELIVERY MODE
09/21/2007	ELECTRONIC

1900 EAST NINTH STREET
CLEVELAND, OH 44114

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket1@thepatentattorneys.com
hholmes@thepatentattorneys.com
osteuball@thepatentattorneys.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)
	10/749,787	RICHARDSON, JOHN J.
	Examiner	Art Unit	
	Qing-Yuan Wu	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 June 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-34</u> is/are pending in the application.

    4a) Of the above claim(s) <u>25-34</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 December 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/6/04</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☒ Other: <u>1.105</u>

DETAILED ACTION

1.   Claims 1-34 are pending in the application.

Election/Restrictions

2.   Applicant's election with traverse of Claims 1-24 in the reply filed on 7/5/07 is

acknowledged, since no argument was presented in the reply, the election is treated as an

election without traversal. The requirement is deemed proper for the reasons previously

presented in the office action dated 6/4/07 and is therefore made FINAL.

3.   Affirmation of this election must be made by applicant in replying to this Office action.

Claims 25-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as

being drawn to a non-elected invention. Applicant should cancel non-elected claims in the

amendment.

4.   Applicant is reminded that upon the cancellation of claims to a non-elected invention, the

inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under 37 CFR

1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

5.   Claims 4-7, 9, 15, 17 and 19-20 is objected to because of the following informalities:

a.   As to claims 4-7, 9, 15, 17 and 19-20, "the adapter object" should read --the

adapter objects-- or --one of the adapter objects--.

b.   As to claim 19- "Fig. 4" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter.

8.   Claim 1 is a system claim directed to software alone without claiming associated

computer hardware required for execution. Claims 2-23 are dependent claims of claim 1 and do

not support the hardware requirement for implementing the system of claim 1, therefore they are

rejected for the same reason.

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10.   Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

More specifically, the specification failed to support the limitation of a tuning component and

provide description on how the performance is adjusted or how the DFC is profiled.

Claim Rejections - 35 USC § 102

11.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12.   Claims 1-2, 10, 15 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by

Parry (U.S. Publication 2002/0032805).

13.   As to claim 1, Parry teaches a driver management system, comprising:

        a driver framework component (DFC) that is separate from a driver [stream class driver,

abstract; 22, 36, Figs. 1-3; paragraph 7], the DFC comprising:

        a presentation component that selectively exposes adapter objects to the driver in a multi-

threaded environment [Windows NT, paragraphs 45-47, 53-54, 69; 34, Fig. 1].

14.   As to claim 2, Parry teaches further comprising an operating system kernel that operates

or performs in a multi-threaded software environment [Windows NT, paragraphs 20, 23, 34].

15.   As to claim 10, Parry teaches the adapter objects are employed for request dispatch,

locking, or synchronization [paragraph 54].

16.   As to claim 15, Parry teaches the adapter object is associated with at least one of a

request object, a driver object, a device object, and a queue object [paragraph 69].

17.   As to claim 24, this claim is rejected for the same reason as claim 1 above.

Claim Rejections - 35 USC § 103

18.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19.   Claims 3, 13-14, 16, 18-19 and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Parry as applied to claims 1-2, 10, 15 and 24 above, in view of McCauley III

et al (hereafter McCauley) (U.S. Patent 5,999,986).

20.   As to claim 3, Parry does not specifically teach the driver operates in a less-threaded

software environment than the operating system kernel. However, McCauley teaches event

notification between disparate threading models such as a multi-threaded event sink and a single-

threaded event source [McCauley, col. 7, lines 50-56; col. 10, lines 16-20]. It would have been

obvious to one of an ordinary skill in the art at the time the invention was made, to have

modified the teaching of Parry with the teaching of McCauley because the teaching of McCauley

further enhances the communication among communicating components by providing support

for asynchronous event delivery amount disparate threading models.

21.   ˙ As to claim 13, this claim is rejected for the same reason as claim 3 above. In addition,

Parry and McCauley teach the driver registers a set of callback functions to the adapter objects

during initialization of the driver [McCauley, col. 1, lines 36-40; col. 2, lines 48-50].

22.   As to claim 14, Parry and McCauley do not specifically teach the DFC raises events that

occur such as Delayed Procedure Calls (DPC's), I/O cancellation events, plug and play events, or

power management events. However, McCauley disclosed firing events from event sources to

event sinks [McCauley, col. 1, lines 10-13]. It would have been obvious to one of an ordinary

skill in the art at the time the invention was made, to have recognized that the events of

McCauley would include various events such as those as claimed without departing from the

intended scope of McCauley.

23.   As to claim 16, this claim is rejected for the same reason as claim 3 above. In addition,

Parry and McCauley teach at least one of the objects is owned or derived from at least one other

object [McCauley, col. 9, lines 43-45].

24.   As to claim 18, this claim is rejected for the same reason as claim 3 above. In addition,

Parry and McCauley teach comprising a tuning component to automatically adjust performance

over time as the DFC is profiled [McCauley, col. 12, lines 34-36] (The examiner's interpretation

of the above limitation as a system capable of being optimized or configured since the applicant

failed to preclude nor defined the above limitations in the specification).

25.   As to claim 19, this claim is rejected for the same reason as claim 3 above. In addition,

Parry and McCauley teach the adapter object allows the driver to specify an optional Context

memory allocation to be associated with a handle [McCauley, col. 5, lines 19-25].

26.   As to claim 22, this claim is rejected for the same reason as claim 3 above. In addition,

Parry and McCauley teach further comprising at least one of a synchronous and an asynchronous

threading model [McCauley, abstract; col. 12, lines 19-28].

27.   Claims 4-9, 11-12, 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Parry and McCauley as applied to claims 3, 13-14, 16, 18-19 and 22 above, in view of

Bennett (U.S. Patent 5,734,909).

28.   As to claim 4, this claim is rejected for the same reason as claim 3 above. Parry and

McCauley do not specifically teach the adapter object includes an internal state data and one or

more sets of locks for managing interactions between the driver and the DFC. However,

McCauley disclosed synchronization mechanism to limit concurrent access to the event sink

[McCauley, col. 3, lines 65-66]. In addition, Bennett teaches a lock structure for synchronizing

access to shared data [Bennett, abstract; col. 3, lines 8-24; col. 5, lines 46-59]. It would have

been obvious to one of an ordinary skill in the art at the time the invention was made, to have

modified the teaching of Parry and McCauley with the teaching of Bennett because the teaching

of lock/semaphore for synchronizing access are well known as being considered by Bennett.

29.   As to claims 5-6, these claims are rejected for the same reason as claim 4 above.

30.   As to claims 7-8, these claims are rejected for the same reason as claims 3-4 above.

31.   As to claim 9, this claim is rejected for the same reason as claim 4 above. In addition,

Parry, McCauley and Bennett teaches the invention substantially as claimed including the object

adapter employs a series of reference counts, request deferrals, or other programming

components to facilitate object lifetime and event exposure to a less threaded software module

[Bennett, abstract; col. 1, lines 51-53; col. 3, lines 8-24; col. 5, lines 46-59].

32.   As to claims 11-12, these claims are rejected for the same reason as claim 3 above.

33.   As to claim 17, this claim is rejected for the same reason as claim 4 above. In addition,

Parry, McCauley and Bennett do not specifically teach the adapter object including at least one

of a spinlock, a shared lock, and a FAST_MUTEX. However, Bennett disclosed a lock structure

for synchronizing access to shared data [Bennett, abstract; col. 3, lines 8-24; col. 5, lines 46-59],

in addition spinlock, shared lock, and FAST_MUTEX are types of locks that are well known in

the art. It would have been obvious to one of an ordinary skill in the art at the time the invention

was made, to have substitute the locks recited for another to yield the predictable result of

locking access to a data element.

34.   As to claim 23, this claim is rejected for the same reason as claim 4 above.

35.   Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parry, McCauley, Bennett as applied to claims 4-9, 11-12, 17 and 23 above, in view of Shoens et al. (hereafter Shoens) (U.S. Patent 4,965,719).

36.   As to claim 20, this claim is rejected for the same reason as claim 4 above. Parry, McCauley and Bennett do not specifically teach the adapter object is associated with a hierarchical locking model. However, Bennett teaches a lock structure for synchronizing access to shared data [Bennett, abstract; col. 3, lines 8-24; col. 5, lines 46-59]. In addition, Shoens teaches a hierarchical locking scheme [Shoens, col. 8, lines 1-6]. It would have been obvious to one of an ordinary skill in the art at the time the invention was made, to have modified the teaching of Parry, McCauley and Bennett with the teaching of Shoens because the teaching of Shoens further enhances the teaching of Parry, McCauley and Bennett by providing locking schemes for hierarchical/nested structures.

37.   As to claim 21, this claim is rejected for the same reason as claim 20 above.

38.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

        U.S. Patent No. 6,546,443 to Kakivaya et al. teach concurrency access to shared data using lock.

U.S. Patent No. 6,557,046 to McCauley III et al teach synchronizing event notification.

U.S. Patent No. 6,965,893 and 6,108,654 to Chan et al., U.S. Patent No. 6,772,154 to

Daynes et al., U.S. Patent No. 5,933,825 to McClaughry et al., teach hierarchical lock models.

39.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Qing-Yuan Wu whose telephone number is (571) 272-3776. The

examiner can normally be reached on 8:30am-6:00pm Monday-Thursday and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Qing-Yuan Wu

Examiner

Art Unit 2194

Requirement For Information - 37 C.F.R. § 1.105

1.   Applicant and Assignee of this application are required under 37 C.F.R. 1.105 to provide

the following that the Examiner has determined is reasonably necessary to the examination of

this application.

2.   The Examiner's prior art search revealed a co-pending application (10/706,776) filed

under the same inventor and assignee which includes a number of intervening references that

have been asserted in rejecting the co-pending application under 35 U.S.C. 102(e).   The

Examiner contends that the serialization of events in a multi-threaded environment of the co-

pending application required for enabling the current invention constitute prior art.

3.   To make the record clear the examiner is requiring all of applicant's co-pending

applications along with prior arts cited and Information Disclosure Statements filed as part of the

co-pending applications that are related to the serialization of events in a multi-threaded

environment.

4.   As these are needed to provide a complete examination of the pending application it is

proper to require disclosure of the following. See M.P.E.P. 704.11, 37 C.F.R 1.97 and 37 C.F.R.

1.105(a)(i)-(vii).

5.   In response to this requirement, please provide:

a.   A copy of any non-patent literature, published application, or patent (U.S. or

foreign), by any of the inventors, that relates to the claimed invention.

6.   The applicant is reminded that the reply to this requirement must be made with candor

and good faith under 37 C.F.R. 1.56. Where the applicant does not have or cannot readily obtain

an item of required information, a statement that the item is unknown or cannot be readily

obtained will be accepted as a complete reply to the requirement for that item.

7.   The fee and certification requirements of 37 C.F.R. 1.97 are waived for those documents

submitted in reply to this requirement. This waiver extends only to those documents within the

scope of this requirement under 37 C.F.R. 1.105 that are included in the applicant's first complete

communication responding to this requirement. Any supplemental replies subsequent to the first

communication responding to this requirement and any information disclosures beyond the scope

of this requirement under 37 C.F.R. 1.105 are subject to the fee and certification requirements of

37 C.F.R. 1.97.

8.   The requirement is given the same period for reply as the instant action on the merits.
See MPEP 704.13.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Qing-Yuan Wu whose telephone number is (571) 272-3776. The

examiner can normally be reached on 8:30am-6:00pm Monday-Thursday and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Thomson can be reached on (571) 272-3718. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Qing-Yuan Wu

Examiner

Art Unit 2194

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100